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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/713,238

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EXAMINER

PARK, JUNG H

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

06/11/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/713,238

Applicant(s)

MURALIDHAR ET AL.

Examiner

Jung Park

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
4a) Of the above claim(s) 33-48 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

Group I. Claims 1-32 are drawn to a router architecture, classified in class 370, subclass 400.

Group II. Claims 33-48 are drawn to a routing protocol in details, classified in class 370, subclass 392.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions Group I and Group II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention Group I is a router system comprising a plurality of control planes and a central plane within a backplane and a method of handling a protocol. In the instant case, invention Group II is a method of controlling routing protocol in details. See MPEP § 806.05(d).
3. Because these inventions are distinct for the reasons given above and require different searches as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Julie L. Reed on May 31, 2007, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-32. Affirmation of this election must be made by applicant in replying to this Office action. Claims 33-48 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Drawings Objections

4. The drawings are objected to under 37 CFR 1.83(a) because they fail to show item 202 in Figure 2 as described in the specification.

Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

- a. Item 202 is described in the specification, but not included in the Figure 2.
- b. Figures 1-5 are not legible or clearly identifiable.

Appropriate correction required.

Specification Objections

5. The disclosure is objected to because of the following informalities:
- a. The examiner suggests changing "forwarding-plane 10c" to
--forwarding-plane 24c--.
 - b. It is required to update Application No in page 11, line 15.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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7. Claims 14-17 and 18-21 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

a. What is mean by "a central registration point" in claims 14 and 18?

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1, 2, 4, 6, 7, 26, 27, 29, 31, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soumiya et al. (US 7,136,357, "Soumiya") in view of McCormick et al. (US 2002/0083260, "McCormick").

Regarding claim 1, Soumiya discloses a system, comprising:

- a control processor (a processor, not shown, for controlling functions in MPLS router, see fig.8) configured and arranged to execute a control portion of an interior gateway signaling protocol (using RSVP-TE, see 116 fig.8; col.4, ln.10; fig.6; and col.9, ln.24-25); and a table of label switched paths (table for LSPs, see fig.7; fig.8; and col.10, ln.21-27);
- a line processor (a processor, not shown, for traffic engineering, see fig.8-9) configured and arranged to execute an offload portion of an interior gateway signaling protocol (packet forwarding through traffic engineering, see 116, 114, and 111 fig.8); and

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at least one timer (a timer, not shown, for time period, see fig.12 and col.10, ln.27-37)

associated with each label switched path (LSPs, see col.10, ln.27-37); and

- a device to allow the control card and the line card to communicate (a device for communication for sections described in fig.8).

Soumiya does not explicitly disclose the limitations of "a control card, a line card, and a backplane to allow the control card and the line card to communicate." However, McCormick discloses a plurality of dedicated line card comprising a line processor and the examiner takes an official notice that a backplane is a circuit board to connect board/line cards together to make up a complete computer or network system.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to include a control card as a central control card, a line card comprising a line processor for each of the plurality of units, and a backplane for communication among line cards for the functions/units in the MPLS router of Soumiya with the motivation of backplane's greater reliability and its convenience when line cards are added to or removed from the system.

Regarding claim 2, Soumiya disclose, "the control processor further comprising a general-purpose processor (inherent to have a general-purpose processor in the MPLS router for some other execution, see fig.8)."

Regarding claim 3, Soumiya does not explicitly disclose, "the control processor further comprising an Intel Architecture processor." However, it would have been an obvious matter of user's decision to a person of ordinary skill in the art to use one of

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available processors at the time of invention was made with the motivation of considering costs and reliability of a system.

Regarding claim 4, Soumiya discloses, "the line processor further comprising a network-enabled processor (processor for MPLS router, see fig.8)."

Regarding claim 5, Soumiya does not explicitly disclose, "the line processor comprising an Intel IXP processor." This claim is rejected for the same reasons and motivation set forth in the rejection of claim 3.

Regarding claim 6, Soumiya discloses, "the backplane further comprising a physical backplane connection." This claim is rejected with the same reasons and motivation set forth for the backplane in claim 1.

Regarding claim 7, Soumiya discloses, "the backplane further comprising a network (fig.8)."

Regarding claim 18, Soumiya discloses a method of establishing a control portion of a distributed exterior gateway protocol, comprising:

- initializing a control unit (inherent to initialize a unit when power of a system is ON, see fig.8);
- registering a control portion of a protocol (RSVP-TE, see fig.8-9) to be executed by the control unit with a central registration point (registering using a link pointer to a label stack, see col.7, ln.64-67);

- setting up control connections with units executing offload portions of the protocol (LSP setup, see fig.8);
- configuring the units by providing information with regard to signaling peers (fig.6), link switched paths (LSPs, fig.6), and link switched path timeout periods (time period, see fig.12 and col.10, ln.27-37); and
- performing core signaling protocol functions (RSVP TE functions, see fig.8).

Soumiya does not explicitly disclose the limitation of “a control card and a line card”. However, this claim is rejected for the same reasons and motivation set forth for the cards in the rejection of claim 1.

Regarding claim 19, Soumiya discloses, “registering a control portion of a protocol to be executed further comprising registering the control portion with a distributed control plane architecture infrastructure module (registering using a link pointer to a protocol control section, see fig.8 and col.7, ln.64-67).”

Regarding claim 20, Soumiya discloses, “performing central signaling protocol functions further comprising controlling admission to the signaling connections (path selection, see fig.8).”

Regarding claim 21, Soumiya discloses, “performing central signaling protocol functions further comprising setting quality of service parameters (traffic characteristic, see fig.1C).”

Regarding claim 26, it is a claim corresponding to claim 1, except the limitation of "a control and a local version of a link state database (link state databases, see 113A & 114A fig.8 and col.10, ln.21-37)" and is therefore rejected for the similar reasons set forth in the rejection of claim 1.

Regarding claims 27, 29, 31, and 32, they are claims corresponding to claims 2, 4, 6, and 7, respectively and are therefore rejected for the similar reasons set forth in the rejection of the claims.

10. Claims 8-13, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soumiya in view of Hayashi et al. (US 2002/0083174, "Hayashi") and further in view of McCormick.

Regarding claim 8, Soumiya discloses a method of handling an interior gateway signaling protocol, comprising:

- establishing connections with peer devices (between LSRs, see fig.6);
- executing at least one state machine for each connection established (state machine for state checking for paths, see col.55, ln.55-67);
- exchanging and validating signaling protocol messages with peer devices (RSVP LSP Tunnel messages, see fig.6 and col.9, ln.24-54+); and

Soumiya lacks what Hayashi discloses, "communicating with a control card if there is a failure or a connection status change (LSP failure, see fig.24 and ¶.18)."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to include a status of path/link failure of Hayashi into the system of Soumiya in order to prevent traffic being lost for reliability of the network.

Soumiya does not explicitly disclose the limitation of "a control card". However, this claim is rejected for the same reasons and motivation set forth for a control card in the rejection of claim 1.

Regarding claim 9, Soumiya discloses, "the method comprising receiving configuration information from a control card (fig.8)."

Regarding claim 10, Soumiya discloses, "receiving configuration information from a control card further comprising receiving RSVP-TE configured peers (using RSVP-TE, see 116 fig.8; col.4, ln.10; fig.6; and col.9, ln.24-25), incoming and outgoing interface for each label switched path (fig.8), and session timeout values for each label switched path (time period, see fig.12 and col.10, ln.27-37)."

Regarding claim 11, Soumiya discloses, "exchanging and validating signaling protocol messages further comprising exchanging and validating RSVP-TE HELLO messages (hello packet, see col.25, ln.24)."

Regarding claim 12, Soumiya discloses, "exchanging and validating signaling protocol messages further comprising exchanging and validating RSVP PATH messages (Path message, see fig.6)."

Regarding claim 13, Soumiya discloses, "exchanging and validating signaling protocol messages further comprising exchanging and validating RSVP RESV messages (Resv message, see fig.6)."

Regarding claim 14, Soumiya discloses a method of establishing an offload portion of a distributed exterior gateway protocol, comprising:

- initializing a unit (inherent to initialize a unit when power of a system is ON, see fig.8);
- registering an offload portion of a protocol (routing and forwarding, see fig.8-9) to be executed by the unit with a central registration point (registering using a link pointer to a label stack, see col.7, ln.64-67);
- setup a control connection with a control unit (LSP setup, see fig.8);
- transmit data resource data to the control unit (bandwidth data, see 116C fig.8 and col.10, ln.63-67);
- receiving configuration information from the control unit (control units, see 113-116 fig.8);
- establishing signaling connections with interior gateway peers (RSVP-LSP setup, see fig.6); and
- performing signaling protocol functions at the line unit (RSVP-TE, see fig.8-9).

Soumiya lacks what Hayashi discloses, "communicating with the control card during failures or signaling connection changes (LSP failure, see fig.24 and ¶.18)."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to include a status of path/link failure of Hayashi into the system of Soumiya in order to prevent traffic being lost for reliability of the network.

Soumiya does not explicitly disclose the limitation of "a control card and a line card". However, this claim is rejected for the same reasons and motivation set forth for the cards in the rejection of claim 1.

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Regarding claim 15, Soumiya discloses, "registering an offload portion further comprising registering with a distributed control plane architecture infrastructure module (registering using a link pointer to a protocol control section, see fig.8 and col.7, ln.64-67)."

Regarding claim 16, it is a claim corresponding to claims 11-13 and is therefore rejected for the similar reasons set forth in the rejection of claims 11-13.

Regarding claim 17, Soumiya discloses, "performing signaling protocol functions further comprising executing at least one state machine for each signaling connection (state machine for state checking for paths, see col.55, ln.55-67)."

Regarding claim 22, it is a claim corresponding to claim 8, except the limitation of "machine-readable code containing instructions (col.1, ln.14-16)" and is therefore rejected for the similar reasons set forth in the rejection of claim 8.

Regarding claims 23-25, they are claims corresponding to claims 11-13, respectively and are therefore rejected for the similar reasons set forth in the rejection of the claims.

Conclusion

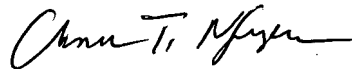
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jung Park whose telephone number is 571-272-8565. The examiner can normally be reached on Mon-Fri during 6:15-3:45.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on 571-272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JP
Jung Park
Patent Examiner



CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
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